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**The Slam Dunk  
Digital Lesson**

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This is a preview chapter from Jamie McKenzie's newest book, planned for shipping in November of 2002 .

## **Chapter 12 - Great Lesson Design**

### **The Test of Monday Morning**

“Can I use this on Monday morning?”

A great lesson will pass the test of Monday morning. It should have enough practical value to slide comfortably into the weekly classroom agenda without disruption, stress or drag upon the program.

We must take care when pressured by state leaders and others to “integrate technology” into our daily lessons because the process may be putting the cart before the horse. The very phrase implies some kind of injection from the outside that may not flow naturally out of healthy lesson design. We may end up injecting technology for the mere sake of technology, sacrificing student learning and sound lesson design principles on the technology altar.

Sound lesson and unit design will flow out of some greater sense of purpose than the integration of technology (note the singular) into a lesson. We might select a model such as **Understanding by Design** (Wiggins and McTighe, 2000) and start unit development with a focus on the key concepts and understandings we wish to emphasize. A teacher or planning group then logically proceeds to identifying or creating learning experiences likely to support student learning of those essential questions and concepts. Strategies should flow naturally out of conceptual goals, and the selection of tools should follow clarification of purpose. We should put the program horse before the technology cart.

When proceeding with this type of unit design, teachers may find that digital resources are only appropriate for a few of these lessons and learning activities planned for several weeks of study. The teacher only adds digital lessons employing new technologies when such lessons will thereby be enhanced beyond other strategic choices. In those cases where library books, interviews or field study may be preferable, they should prevail.

## Module Maker 2

An example of this kind of lesson design can be found at <http://questioning.org/module2/quick.html>. Module Maker 2 was invented to support teachers in creating digital lessons in ways that might comfortably emerge as part of larger unit. Excerpts are reproduced here, but online examples will be found at the above URL.

Can we invent curriculum-rich lessons that take students half an hour but engage them in powerful thought with considerable skill?

Module Maker 2 equips teachers to create standards-based learning experiences that combine good print information with good digital resources.

In 30 minutes, a team of students can wrestle with a big question and cast some light on it, be they first graders, preschoolers or approaching middle school.

The secret is good, tight lesson design.  
No waste, no bother and no wandering about.

Structure, clarity and meaning!

We need several elements to build a great lesson . . .

1. An intriguing question that matches the standards.
2. A collection of information that will spark understanding.
3. Thought-provoking activities.

Provoking a sense of wonder is paramount.  
Curiosity rarely kills a cat, but boredom is definitely lethal!

### **The 3 Prime Questions**

Certain questions provoke more curiosity and wonder than others.  
Three stand out as especially powerful:

Why?  
How?  
Which is best?

#### **1. Why**

Why do things happen the way they do?

This question requires analysis of cause-and-effect and the relationship between variables. It leads naturally to problem-solving (the "How" question) or to decision-making (the "Which is best?" question).

"Why?" is the favorite question of four-year-olds. It is the basic tool for figuring stuff out (constructivist learning). At one point while researching student questions in one school district, I found "Why?" occurred most often in kindergarten classrooms and least often in the high school (which had the highest SAT scores in the state).

Why does the sun fall each day?  
Why does the rain fall?  
Why do some people throw garbage out their car windows?  
Why do some people steal?  
Why do some people treat their children badly?  
Why can't I ask more questions in school?

#### **2. How?**

How could things be made better?

This question is the basis for problem-solving and synthesis. Using questions to pull and change things around until a new, better version emerges.

"How?" is the inventor's favorite question.

"How?" is the tool which fixes the broken furnace and changes the way we get cash from a bank.

"How?" inspires the software folks to keep sending us upgrades and hardware folks to create faster chips.

"How?" is the question which enables the suitor to capture his or her lover's heart.

"How?" is the reformer's passion and the hero's faith.

### 3. Which is best?

Which do I select?

This question requires thoughtful decision-making - a reasoned choice based upon explicit (clearly stated) criteria and evidence.

"Which?" is the most important question of all because it determines who we become.

Which school or trade will I pick for myself? Which path will I follow?

TWO roads diverged in a yellow wood,  
And sorry I could not travel both  
And be one traveler, long I stood

Robert Frost

Faced with a moral dilemma, **which path** will I follow? Confronted by a serious illness, **which treatment** will I choose for myself?

### Mining the Standards

We must learn to pull these intriguing questions out of state or provincial curriculum standards . . . questions that require analysis, interpretation, inference and synthesis even from our youngest students.

What can we find below the surface? A question must pass the test of "So what?"

"What did you do in school today?"

"Nuthin."

Even very young children can tackle challenging questions if we frame them carefully in words that make sense to them.

First graders can compare and contrast fast food restaurants, for

example.

Four-year-olds can talk about ways to help a sad friend.  
Even young children can analyze, interpret, infer and synthesize.

Many states have stated demanding goals. Witness these science standards from Wisconsin:

### **Wisconsin Performance Standards**

By the end of grade four, students will:

C.4.1 Use the vocabulary of the unifying themes\* to ask questions about objects, organisms, and events being studied

C.4.2 Use the science content being learned to ask questions, plan investigations\*, make observations\*, make predictions\*, and offer explanations\*

C.4.3 Select multiple sources of information to help answer questions selected for classroom investigations\*

C.4.4 Use simple science equipment safely and effectively, including rulers, balances, graduated cylinders, hand lenses, thermometers, and computers, to collect data relevant to questions and investigations\*

C.4.5 Use data they have collected to develop explanations\* and answer questions generated by investigations\*

C.4.6 Communicate the results of their investigations\* in ways their audiences will understand by using charts, graphs, drawings, written descriptions, and various other means, to display their answers

C.4.7 Support their conclusions with logical arguments

### **Finding Good Content**

Digital information sources can be just wonderful, but they are often quite limited for certain subjects - especially when planning for younger children. It is hard to find pages designed with easy reading, large print and attractive graphics.

Rather than start with great questions drawn from the standards, teachers might wisely start by prospecting for web sites that have content matching the content for social studies or science in their curriculum.

Once they find good content, they can extract the analysis, inference,

interpretation and synthesis questions that will form the basis for the student learning activity.

## **Keeping Digital Lessons in Perspective**

Most of the time we expect that students will learn about science and social studies through a mix of media and sources . . . some digital, some print and some from nature and the community. The digital lessons we design are brief "chunks" that must fit into a larger web of activities.

If students are going to learn about storms, for example, perhaps they should begin with a brightly illustrated text or book from the library.

They might interview parents or grandparents about storm experiences.

We would add digital learning to our learning web only if we found a storm site that brought extra meaning and value to the study.

Perhaps NOAA or some other agency would be a good source of information not readily available in print?

## **Prospecting for Digital Riches**

Sadly, search engines are rarely good tools to employ when looking for learning materials suited to young children. You can waste dozens of hours wandering around through hundreds of sites that are poorly designed, inaccurate and developmentally inappropriate.

It makes better sense to check out lists of content sites suggested by educators who have some judgment (and time) to separate treasures from garbage.

One example is Kathy Schrock's Guide for Educators

<http://school.discovery.com/schrockguide>

Another example is KidsClick - a site created by school librarians who have identified child-appropriate material by subject heading.

<http://sunsite.berkeley.edu/KidsClick!/>

## **Relying On Templates**

While templates can reduce the flair and creativity of online lessons, they do have the advantage of speeding the invention process.

Rather than putting most of their time and effort into color, appearance and special effects, templates permit teachers to create lessons with little fuss or bother.

Those with HTML design skills may return to these lessons at a later date to modify design elements in line with personal preferences.

To create lessons using Module Maker 2, teachers will add words and graphics to 4-6 pages that will be used by students and other teachers.

These templates will be found online at <http://questioning.org/module2/quick10.html>

## **One Page for Each Key Element**

1. The Essential Question and Learning Task
2. The Information Source
3. The Student Activity
4. The Assessment Activity
5. Enrichment Activities
6. Teacher Support Materials

A sample lesson will be found at <http://questioning.org/module2/quick9.html>

### **1. The Question**

When you compare hurricanes during the past decade, which two deserve a place on the top of the list for damage and destruction? To answer this question, you must compare the damage done by several hurricanes and rank the list from most damage at the top to the least damage at the bottom.

### **2. The Information Sources**

You will visit a government Web site to learn about the damage done by recent hurricanes - the National Climatic Data Center at <http://lwf.ncdc.noaa.gov/oa/ncdc.html>

- \* Hurricane Fran
- \* Hurricane Mitch
- \* Hurricane Georges
- \* Hurricane Bonnie
- \* Hurricane Bret

### **3. The Student Activity**

It is the student's job to fill in the grid below, comparing the hurricanes. Teachers will either print the grid on paper for students, or they can build one as a table in their word processing program. Once they have all the information, then they will rank the hurricanes from most damaging to least damaging.

1 = top damage  
5 = least damage.

Name of Hurricane	Damage \$	Deaths	Wind	Other	Date	Rank
<a href="#"><u>Hurricane Fran</u></a>						
<a href="#"><u>Hurricane Mitch</u></a>						
<a href="#"><u>Hurricane Georges</u></a>						
<a href="#"><u>Hurricane Bonnie</u></a>						
<a href="#"><u>Hurricane Bret</u></a>						

The underlined names of hurricanes above link directly to information rich pages at NOAA that will speed students toward insight and understanding.

A well scaffolded lesson offers a number of real advantages.

- 1) Provides clear directions
- 2) Clarifies purpose
- 3) Keeps students on task
- 4) Offers assessment to clarify expectations
- 5) Points students to worthy sources
- 6) Reduces uncertainty, surprise and disappointment
- 7) Delivers efficiency
- 8) Creates momentum

#### 4. The Assessment Activity

Now the students write a paragraph telling which hurricane they would pick as the "storm of the century." They must provide convincing facts as evidence to back their choices.



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